REMARKS

Claims 1-26 are pending in the Application. Applicants respectfully request entry of the foregoing amendments to the specification prior to further examination. No new matter has been introduced. Acceptance is respectfully requested.

35 U.S.C. 102 Rejection

Claims 1-6, 8-14, 16-22, and 24-26 have been rejected under 35 U.S.C. 102(e) as being anticipated by Abella et al. (US Pat. No. 6,044,347) ("Abella").

The present invention provides a method and apparatus for converting an utterance representation into a response. According to the present invention, a recognized spoken utterance 15 is converted into an utterance representation by building a frame structure and then translating the frame structure into propositions comprising attribute-object-value triples. See Fig. 1 and Specification, page 16, line 7 through page 17, line 15. The utterance representation is then fed into a reasoning facility for processing. The reasoning facility generates an application specific goal derived from the utterance representation. See, e.g., Specification, page 21, lines 21-23. Like the utterance representation, the application specific goal is a proposition that comprises attribute-object-value triples and that "may contain a variable for one or more of its elements." Specification, page 19, lines 26-28.

The reasoning facility then analyzes the utterance representation based on the application specific goal and a corresponding set of goal-directed rules to generate a subgoal such as identifying ambiguous information in the utterance representation. A goal-directed rule states that "when the condition propositions are satisfied, then the action propositions can be concluded." Specification, page 19, lines 22-23. Each goal-directed rule represents a valid inference step (from the goal-directed rule's condition to the application specific goal) that may be taken in a domain associated with the application specific goal. Specification, page 19, lines 20-22. A sample rule is shown at page 20, lines 18-25 of the specification as originally filed. The reasoning facility scans through the rules in the rule base to look for rules whose actions match the goal. Once a matching rule has been found, its conditions must be satisfied. Thus, the

rule's conditions become new goals for the inference engine to achieve based on the content of the memory and the conversational record. See Specification, page 20, lines 4-6.

Finally, the reasoning facility generates a response based on the analysis of the utterance representation if ambiguous information is identified.

In contrast to the present invention, Abella provides a dialogue manager that uses a tree representation of an utterance to determine which of a number of dialogue motivating algorithms to execute. See col. 7, lines 58-63. The dialogue motivating algorithms are based on general dialogue motivators that are not application specific. Dialogue motivators include: "(1) queries generated by missing required information; (2) relaxation; (3) confirmation; [and] (4) disambiguation of user inputs." Col. 5, lines 53-63. In the case where the dialogue manager finds "two or more possible meanings for a given user utterance ... the dialogue manager creates an interpretation tree with the same number of branches as possible interpretations for the utterance and then attempts to disambiguate it." Col. 9, lines 31-44; see also Fig. 5. The dialogue manager uses a hierarchy of frames, which represent a concept or object in a dialogue processing application, to create an interpretation tree. See col. 9, lines 1-10 and Fig. 3.

Abella does not generate an application specific goal (1) derived from the utterance representation and (2) taking the form of a proposition that comprises attribute-object-value triples. In stark contrast, Abella determines which of a number of general dialogue motivating algorithms to execute based on a tree representation of an utterance. See col. 7, lines 58-63.

In addition, Abella does not teach converting a recognized spoken utterance into an utterance representation by building a frame structure and then translating the frame structure into propositions comprising attribute-object-value triples. Abella instead uses hierarchies of frames and interpretation trees.

Finally, Abella does not teach goal-directed rules that represent a valid inference step from the goal-directed rule's condition to the application specific goal that may be taken in a domain associated with the application specific goal. Abella's dialogue motivating algorithms are based on general dialogue motivators that are not application specific.

Since Abella does not teach, suggest or otherwise make obvious each and every limitation of base claims 1 and 25 as now amended ("generating an application specific goal derived from the utterance representation, wherein the application specific goal and the utterance

representation are propositions comprising attribute-object-value triples, the proposition corresponding to the utterance representation being derived from a frame representation; analyzing the utterance representation based on [a]... goal-directed rule representing a valid inference step from the goal-directed rule's condition to the application specific goal that may be taken in a domain associated with the application specific goal), Applicants respectfully request that the rejection of base claims 1 and 25 be withdrawn.

Base claims 9, 17 and 26 has been amended to include limitations similar to base claims 1 and 25. Therefore, Applicants respectfully request that the rejection of independent claims 9, 17 and 26 be withdrawn. Support for the added claim language is found at least in the Specification at page 16, line 7 through page 17, line 15, page 19, lines 20-22 and 26-28, and page 21, lines 21-23. No new matter has been introduced.

Since claims 2-6 and 8 depend from now amended base claim 1, claims 10-14 and 16 depend from now amended base claim 9, and claims 18-22 and 24 depend from now amended base claim 17, Applicants respectfully request that the rejection of these dependent claims be withdrawn for at least the same reasons.

35 U.S.C. 103 Rejection

Claims 7, 15, and 23 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Abella in view of McGlashan ("Towards Multimodal Dialogue Management," Proceedings of the Twente Workshop on Language Technology, 1996.)

As described above, Abella does not teach, suggest or otherwise make obvious each and every limitation of base claims 1, 9 and 17. McGlashan does not add to Abella the present invention "generating an application specific goal derived from the utterance representation, wherein the application specific goal and the utterance representation are propositions comprising attribute-object-value triples, the proposition corresponding to the utterance representation being derived from a frame representation; analyzing the utterance representation based on [a]... goal-directed rule representing a valid inference step from the goal-directed rule's condition to the application specific goal that may be taken in a domain associated with the application specific goal." Therefore, dependent claims 7, 15 and 23 are allowable for the same

reasons. The withdrawal of the rejection of dependent claims 7, 15 and 23 is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims (1-26) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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